

**R E M A R K S**

Claims 1 and 3-9 are pending and stand ready for further action on the merits. Support for the amendment to claim 1 can be found in cancelled claim 2. Claims 3-5 have been amended to not depend from cancelled claim 2. No new matter has been added by way of the above amendments.

**Issues under 35 U.S.C. 112**

Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph for indefinite. Applicant respectfully traverses the rejection.

The Examiner objects to the typographical error at line 5 of claim 1. In accordance with the Examiner's suggestion, Applicant has amended claim 1 by replacing the term "plane" with "plant".

In view of the above amendments and comments, Applicant respectfully submits that claim 1 particularly points out and distinctly claims the subject matter which Applicant regards as their invention. Accordingly, withdrawn of the rejection is respectfully requested.

**Prior Art Based Issues**

The following rejections are pending:

- (a) Claims 1 and 6-7 are rejected under 35 U.S.C. 102(a) as being anticipated by WO 01/07135 (WO '135);
- (b) Claims 1 and 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,063,382 (US '382);
- (c) Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0880894 (EP '894); and
- (d) Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO '135, discussed above, or US '382, discussed above, both in view of Sakai et al. (c 1990).

Applicant respectfully traverses each of the rejections.

With respect to rejections (a) - (c), Applicant respectfully submits that the invention of claim 1, as originally filed, is not anticipated by the cited references. However, in order to advance prosecution, Applicant has amended claim 1 to recite the subject matter of claim 2, a claim not currently under rejection, thereby rendering rejections (a) - (c) moot.

With respect to rejection (d), Applicant first provides comments as to the advantages of the present invention.

The present invention relates to a process of producing an antibacterial substance derived from a plant which includes disintegrating at least a part of the tissue of the plant and releasing the antibacterial substance therefrom, and bactericidal or bacteriostatic compositions containing as an active ingredient the antibacterial substance obtained by the process. The uniqueness of the present invention lies in the fact that the antibacterial substance is obtained from the tissue of the plant by disintegrating the plant tissue with an enzyme (e.g., protopectinase) capable of acting on protopectin to release a pectin substance.

Applicant now turns to the specific distinction(s) which render the present invention patentable over the cited references.

The Examiner appears to be aware that certain deficiencies lie in the teachings of WO '135 and US '382. Specifically, these references fail to teach or fairly suggest the use of an enzyme capable of acting on protopectin to release a pectin substance. In order to cure this deficiency, the Examiner cites Sakai et al. Applicant respectfully submits that the skilled artisan would not be motivated to use the protopectinases of Sakai et al. in the extraction process of the WO '135 and US '382.

The mere fact it is possible for isolated disclosures to be combined does not render the result of that combination obvious

absent a logical reason of record which justifies the combination. *In re Regel et al.* (CCPA 1975) 526 F2d 1399, 188 USPQ 136. Furthermore, both the suggestion to make the claimed composition or device or carry out the claimed process and the reasonable expectation of success must be founded in the prior art, not in Applicant's disclosure. *In re Vaeck* (CAFC 1991) 947 F2d 488, 20 PQ2d 1438.

Both WO '135 and US '382 are concerned with a generalized extraction process using solvent extraction to obtain an extract having an anti-bacterial property. This in distinction to Sakai et al., who teach that protopectinase can be used to solubilize protopectin, thereby releasing highly polymerized pectin, see page 888, column 1. It is important to note that there is no teaching or suggestion in Sakai et al. that the pectins, which are released using protopectinase have anti-bacterial activity. Accordingly, there would be no motivation to use the protopectinase of Sakai et al. in the extraction process of US '382 and WO '135 and there would be no reasonable expectation of success. As mentioned above, without the reasonable expectation of success, a *prima facie* case of obviousness under 35 USC 103 cannot be said to exist.

Furthermore, Applicant respectfully submits that the inventive composition has distinct bactericidal properties from the compositions of the cited prior art. This is evidenced by certain experiments performed by the inventor, Mr. Takuo Sakai.

The results of these experiments are disclosed hereinbelow, and will be included in a Declaration under 37 CFR 1.132 by Mr. Takuo Sakai which will be forwarded to the PTO in a supplemental communication in short order.

It is clear from the data that the means of disintegrating plant tissue has a profound effect on the bactericidal or bacteriostatic properties of the resulting composition.

The experimental data shows that when comparing an antibacterial substance produced using the protopectinase of the present invention (herein referred to as Sample (A)) and an antibacterial substance produced from the same plants as used for Sample (A) without using the protopectinase (herein referred to as Sample (B)), that Sample (A) is superior to Sample (B) in the effect of inhibiting germination of spores as described in TABLE 1 below. Sample (B) is prepared by suspending plant material in a buffer, grinding the plant material and separating the supernatant liquid with a centrifuge.

TABLE 1

Samples	(1) Number of spores having budded	(2) Number of grown cells (colonies/ml)
Water (control)	560	620
Lettuce (A)	51	70
Lettuce (B)	108	72
Cabbage (A)	82	156
Cabbage (B)	183	235
Potato (A)	260	620
Potato (B)	385	620
Pumpkin (A)	55	285
Pumpkin (B)	128	542
Chinese cabbage (A)	48	230
Chinese cabbage (B)	253	255

The above data clearly shows that the use of a protopectinase enzyme on the plant material provides a different composition than merely grinding and centrifuging the plant material. Accordingly, neither WO '135 nor US '382 teach a composition that inherently has the same structure as the composition of the present invention.

Based on the foregoing, Applicant respectfully submits that a *prima facie* case of obviousness cannot be said to exist and withdrawal of rejection (d) is respectfully requested.

### **Drawings**

Applicant notes that this application was filed with two sheets of drawings. However, the Examiner has not acknowledged whether the drawings are acceptable. Applicant respectfully requests that the Examiner acknowledges whether the drawings are acceptable in the next communication.

### **Conclusion**

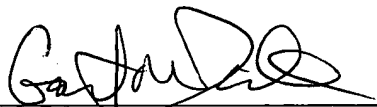
In view of the above amendments and comments, Applicant respectfully submits that the claims are in condition for allowance. A notice to such effect is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact **Garth M. Dahlen, Ph.D., Esq.** (Reg. No. 43,575) at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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